

# Management System Kit Used for the Host of Serial PDA or Handheld PC

## BACKGROUND OF THE INVENTION

5        This invention is related to a kind of "Management System Kit Used for the Host of Serial PDA or Handheld PC (HHPC)" with a memory management system embedded in the host that is connected through a serial port to a data conversion controller composed of a serial input/output device, CPU,  
10    firmware program, storage device and power supply to perform the management and mutual delivery of data and programs.

## BRIEF DESCRIPTION OF THE INVENTION

15        The PDA or handheld PC (HHPC) nowadays features its lightness, thinness, shortness and smallness and has high portability. However, it has its disadvantages in limited space structure, small storage space and insufficient programs and users must usually connect it to an ordinary computer to store files. Taking the most popular host used  
20    for PDA as an example, it has only a 8MB DRAM and only about 2MB space is left when access a Chinese program system. This decreases the convenience in practical use.

## Purpose of Invention:

25        The purpose of this invention is to provide a management system kit with small volume, high portability, easy connection, storage capability and program computing function used for serial PDA or handheld PC (HHPC).

30        Another purpose of this invention is to provide a storage device with an unlimitedly expandable memory capacity that will be used as a substitute for the small memory capacity

of PDA or handheld PC to improve the convenience for users

### **Detailed Description:**

To show the technology, features and performance of this invention more clearly, a preferred embodiment with illustrations and drawing numbers is described as follows

### **BRIEF DESCRIPTION OF DRAWINGS**

Figure 1 is the block chart showing this invention and the internal actions of the host

Figure 2 is the flow chart showing the system operation after this invention and the host are connected

### **DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS**

Fig. 1 is the block chart showing this invention and the inter actions of the host for PDA or handheld PC (HHPC). The main structure consists in the embedment of a memory management system (11) in the host of PDA or handheld PC (1) and the data conversion control mechanism (2) contains the units of serial input/output device (21), CPU (22), firmware (23), storage device (24), power supply (25) and USB port (26). The host of PDA or handheld PC embedded with a memory management system (11) is through its serial port (12) connected to the serial input/output device (21) of the data conversion control mechanism (2) to mutually deliver the data and programs of both the host (1) and data conversion control mechanism (2) under the management of the memory management system (11). The main function of CPU (22) is to control the data conversion control mechanism (2). To ensure that the power of the data conversion control mechanism can be used for a long period, CPU shall be equipped

with a low-power and high-speed processor. The firmware device (23) is used as the main control program of the data conversion control mechanism (2) with the function mainly to receive and perform the host commands from serial port (12). The firmware program has Power-On-Self-Test (POST), transmission and command processing functions and can be placed in the Read-Only memory or programmed directly in the Read-Only memory in CPU (22). When the power supply is turned on, the firmware program (23) will enable POST to test all circuits and program functions and send the results to the host (1). The main purpose of the program transmission function is to keep the host (1) online, while that of the command processing function is to receive and perform the commands from the memory management system (11) in the host (1).

The function of the storage device (24) is to store data and programs for the use of the host (1). In addition to DRAM, Flash, or hard drives, it contains a power supply (25) to power the internal circuits of the data conversion control mechanism (2). The power supply (25) can be a re-charging or ordinary alkaline battery and can, depending on storage devices, provide different power. The host (1) may operate energy saving command to save energy.

To facilitate the transmission of files from ordinary PCs or Note-Book PCs to the host (1), a USB port (26) is installed in the data conversion control mechanism (2) to connect the ordinary PC or Note-Book PC from which the files are to be input directly into the storage device (24) of the data conversion control mechanism (2). If a charging

battery is used as the power supply of the data conversion control mechanism (2), it can be charged with the USB port (26).

5       The aforementioned description shows the layout and functions of the internal hardware units constituting the data conversion control mechanism (2). Fig. 2 is the flow chart showing the system operation after this invention in connected to the host. Please refer to Fig. 2 together with  
10 Fig. 1. When the power supply of the machine (1) is turned on, the host (1) operates its internal memory management system (11) immediately and shows the operation interface (41) on the display of the host (1). The memory management system (11) test the connection between the serial port (12)  
15 of the host (1) and the serial input/output device (21) of the data conversion control system (11) automatically and sends the programs or the directories of the programs or data in the storage device of the data conversion control mechanism (2) to the memory (42) of the host (1). The memory  
20 management system (11) makes sure whether there is no error during the transmission (43). If there is any error, the error status will be shown on the display (44) of the host (1). If there is no error during the transmission, the memory management system (11) will further make sure whether any  
25 command is input in (45). If there is any input command, it will be shown on the display (46) of the host (1). Whether the power is turned on or not, the data conversion controller (2) can be connected to the serial port (12) of the host (1) at any time based on the demand of the user.

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It is confirmed based on the aforementioned description

that there is no other technology similar to that of the  
invented management system kit used for the host of serial  
PDA or handheld PC (HHPC). For people who are familiar with  
this technology, all modifications that are made to this  
5 invention and do not exceed the spirit of this invention  
shall be regarded as part of the patent application of this  
invention.